

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Appl. No.	:	10/817,660	Confirmation No. 3412
Appellant	:	Jonathan Qiang Li	
Filed	:	April 2, 2004	
TC/A.U.	:	2624	
Examiner	:	Mia M. Thomas	
Docket No.	:	10031315-1	

Mail Stop Appeal Brief – Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REPLY BRIEF

Dear Sir:

This Reply Brief is submitted in response to the Examiner's Answer mailed May 13, 2008. This Reply Brief is a supplement to appellant's Appeal Brief submitted February 21, 2008.

Argument

The arguments provided below are not an exhaustive statement of appellant's position, but are rather provided for the purpose of countering certain arguments appearing in the Examiner's Answer. The Board is referred to appellant's Appeal Brief for a more thorough statement of appellant's positions.

1. Claims 1-12, 22 and 23 should not be rejected under 35 USC 102(e) as being anticipated by Loui et al. (US 7,039,239 B2; hereinafter "Loui").

With respect to claim 1, the Examiner asserts that Loui discloses "code for retrieving a plurality of training data structures that each comprise data members corresponding to feature elements and a data member identifying one of a plurality of classes" in col. 3, line 38, which references "a feature extraction stage 12" (FIG. 1) that extracts features from "an input color image 10". See, p. 4 of the Examiner's Answer. Appellant disagrees and has argued that Loui's feature extraction stage extracts, from an image, features (or feature sets) of *unknown classification*. That is, at the output of the feature extraction stage 12, none of the features (or feature sets) extracted from the image 10 are associated with any sort of "data member identifying one of a plurality of classes". As a result, the outputs of Loui's feature extraction stage 12 are not equivalent to the "plurality of training data structures" that is retrieved by appellant's claim 1.

On pp. 18-19 of the Examiner's Answer, the Examiner counters appellant's above argument by stating "further support of labeled training data of a known classification can be found at column 11, lines 20-27. . . . Additionally at column 11, lines 2-5, "Mixture models are used to represent the density of data belonging to different classes." The Examiner further discusses how Loui might classify pixels, or groups of pixels, as: sky, water, sand/soil, skin and grass/tree, and refers appellant to Loui's column 10, line 63 or column 4, lines 6-8. However, all of these excerpts of Loui discuss the "classification" of pixels, pixel

groups or image reasons. This classification happens downstream of the feature extraction stage 12.

Appellant does not deny that Loui discloses labeled training data in block 24 (FIG. 1). However, at the output of feature extraction stage 12, all that exists is "feature information such as color, texture, shapes, wavelet coefficients, etc." or "semantic-level feature information such as location of faces, people, structure, etc." See, Loui, col. 3, lines 46-49. How this feature information is extracted is discussed by Loui in col. 4, line 26 - col. 6, line 45. Importantly, Loui does not indicate that the feature information comprises "training data structures", and it does not. Downstream from feature extraction stage 12, Loui uses unsupervised and supervised learning 14, 16 (FIG. 1) to develop cluster and class probability maps 26, 28 which are ultimately combined to develop a modified class probability map 30 (FIG. 1). Nothing in the flow from color image 10 to modified class probability map 30 relates to the processing of "training data structures", as set forth in the second step of claim 1. Rather, all that is *processed* is the feature information output from feature extraction stage 12.

Appellant respectfully asserts that the closest thing to "training data structures" disclosed by Loui is the "labeled training data 24" (FIG. 1). However, appellant believes the Examiner is not equating the labeled training data 24 with claim 1's training data structures because, with this equation, Loui would clearly not disclose what is set forth in claim 1, because the labeled training data is only used in the FIG. 1 block labeled "supervised learning 16".

The Examiner further asserts that Loui discloses "code for processing each of said plurality of training data structures using probabilistic models that are a function of said feature elements to calculate a respective probability indicative of the respective training data structure belonging to its identified class" in FIG. 1, element 28. See, p. 4, of the Examiner's Answer. Again, appellant respectfully disagrees. More specifically, appellant notes that Loui's class probability map 28 is not indicative of the probability of a *training data structure* belonging to its identified class. Rather, the class probability map 28 provides the probabilities of a feature (or feature set) in the image 10 belonging to *each* of

a plurality of classes. As noted in the previous paragraph, the feature (or feature sets) extracted from the image 10 are not training data structures, but are instead features that may ultimately be classified using training data structures.

On p. 21 of the Examiner's Answer, the Examiner counters appellant's above argument, in part, by referring appellant to Loui's col. 10, line 59, which states, "Supervised learning 16 (see Figure 1) has been used for assigning each image pixel a probability of association with every semantic class belonging to the recognition vocabulary." However, appellant contends that this does not result in a probability of a training data structure (of the supervised learning 16) belonging to its identified class. Rather, what Loui teaches is the generation of probabilities of each image pixel belonging to *each class* known by the supervised learning 16.

Finally, the Examiner asserts that Loui discloses “code for generating a scatter plot, using said plurality of training data structures, that visually indicates probabilities of said training data structures belonging to identified classes” in FIGS. 10(a)-(e). See, p. 5 of the Examiner’s Answer. However, none of FIGS. 10(a)-(e) is a scatter plot. They are line graphs.

Appellant believes his Appeal Brief fully addresses Loui's failure to disclose the last element of claim 1. As a result, little more will be said here. Again though, it is important to note that Loui's probability maps indicate the likelihood of pixels in an image belonging to different classes. Loui's probability maps do not indicate the likelihood of "training data structures belonging to identified classes".

Respectfully submitted,
HOLLAND & HART, LLP

By: Gregory W. Osterloth/
Gregory W. Osterloth
Reg. No. 36,232
Tel: (303) 295-8205